**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 28- 32: **Transmission media**

**Networks are classified according to below and we will study the following:**

1. Network Categories: LAN, WAN
2. Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet
3. Network communication standards
4. Network hardware and software
5. **Transmission media**
6. Network security

**Transmission media**

**Physical Transmission**

**Twisted – pair cable**

1. **What is twisted pair cable?** Twisted pair cable is CAT 5 or CAT 6. It is used to carry signals across the network.
2. **Why do new networks use CAT 5E or CAT 6 rather than CAT 3?** New networks use CAT 5 and CAT 6 because they have a faster bandwidth.
3. **What are some disadvantages of CAT 5E and why is it used in so many installations?** Some disadvantages are that in can only reach 100m before it loses connection. It is used in so many installations because it is a reliable and easy way to connect to the network.
4. **What type of networks is this cable largely used in?** This type of cable is used in schools and hospitals.

**Coaxial Cable**

1. **Describe the characteristics of this cable.** Coaxial Cable has only two wires. It is commonly used on T.V.s.
2. **What network is it used in?** Coaxial cable is not used in networks anymore but it is used for T.Vs.

**Fibre-optic cable**

1. **Describe the characteristics of this cable.** Fibre-optic cable contains a special kind of glass that transmits light pulses.
2. **Why is fibre-optic cable often used to connect major switches inside buildings as well as between buildings.** Fibre-optic is used because it has a higher bandwidth than CAT 5, the bandwidth of this cable is 100Mbps.
3. **What are the disadvantages of this cable?** That it is easily broken and it is only capable of handling one-way traffic.

**Wireless Transmission, p 30**

**Radio Waves**

1. **What is required for radio transmissions to occur?**  For radio transmission to occur, a transmitter in needed to transmit the signals, and a receiver is needed to receive the signals.
2. **Wi-Fi networks use radio waves. What are its advantages over a cable network and what are its disadvantages?** The advantages of this are that the device can move around the network and is not located to the one site. A disadvantage of this is that it is not as reliable as cable.
3. **Describe the characteristics of Bluetooth.** Bluetooth uses short range radio waves to transmit data over 10meters. The data transfer rate is 2 Mbps compared to Wi-Fi transmission of up to 108 Mbps.

**Microwaves**

1. **Describe the characteristics of microwave transmission.** Microwave transmission requires a line of sight to work. So there is no obstruction in between the sending dish and the receiving dish.
2. **What are the limitations of microwave transmission?** The limitations of microwave transmissions are that it has to be in a line of sight.

**Satellite**

1. **Satellite transmission can be in what forms?** The forms that Satellite transmission can be in the forms of radio waves or microwaves.
2. **What are the limitations of this form of transmission?** The major limitation for satellite transmission is the distance the waves have to travel to the satellite and then back to earth.
3. **Who might use this form of transmission?** Satellite transmission is usually used for television broadcasts, videoconferencing, or global positioning systems (GPS).

**Infra-red**

1. **Describe the characteristics of infra-red transmission.** Infra-red uses the same type of technology as T.V remotes do. It is effective over short distances but not over 5 meters.
2. **Why is radio wireless networking preferable to infra-red wireless networking?** Radio wireless networking is preferred because it has a higher bandwidth.